wavelength of 13.4 nm), have primarily multi-layered systems of molybdenum and silicon, for example, as optical elements. EUV lithography devices display a vacuum or an inert gas atmosphere in their interior, however hydrocarbons and/or other carbon compounds cannot be completely prevented from appearing inside the device. These carbon compounds are split by the extreme ultraviolet radiation, leading to a film of contaminated carbons precipitating on the optical element. This contamination by carbon compounds leads to significant losses in reflectivity on the optical surface, which can have a considerable impact on the cost-efficiency of the EUV lithography process.

Page 4:

Please replace the first paragraph as follows:

SUMMARY OF THE INVENTION

Against this background, the task of the invention submitted is to provide a process, i.e. a device for decontaminating an EUV Lithography device, by which standstill periods are avoided and equipment changes to the EUV lithography device to be cleaned are kept to a minimum.

Page 9:

Please replace the first full paragraph as follows:

BRIEF DESCRIPTION OF THE DRAWINGS

The invention should be explained in more detail using a sample embodiment.

Please replace the third full paragraph as follows:

DETAILED DESCRIPTION OF THE INVENTION

The figure shows a schematic illustration of a sample embodiment, in which the dotted line indicates vacuum recipient 1 within the EUV lithography device, or in larger installations, vacuum recipient 1 in which the EUV lithography device as a whole is set up. Optical element 2 and the quartz crystal microwave 3 are set up within vacuum recipient 1. Optical element 2 involves reflectors with molybdenum–silicon, multi-layered systems for a wavelength of 13.4 nm. At this wavelength, the silicon-wafer is exposed by means of the lithography device.

IN THE CLAIMS:

Please substitute the following claims for the pending claim of the same number.

WHAT IS CLAIMED IS:

1. (Amended) A process for in-situ decontamination of an EUV lithography device with the following steps:

- Measuring a current degree of contamination,
- Comparing the degree of contamination with at least one given threshold value,
- Adjusting an O_2 supply to the lithography device,
- Repeating the above steps,

whereby all the steps are completed during the exposure operation.

2. (Amended) A process according to claim 1, wherein in addition to adjusting the O_2 supply, UV radiation of a wavelength between 150 nm and 300 nm is radiated into the EUV lithography device.